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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,408	06/21/2001	Nobuhiko Miki	209657US2	3934

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EXAMINER

LAMARRE, GUY J

ART UNIT	PAPER NUMBER
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2133

12

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,408

Applicant(s)

MIKI ET AL.

Examiner

Guy J. Lamarre, P.E.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 26 January 2004 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

0. This office action is in response to Applicants' Amendment of 26 January 2004. The petition for extension of time, concurrently filed, is granted. The Examiner has considered the IDS of 9 Sept. 2003.

0.1 **Claims 2 and 7** are cancelled, **Claims 1, 3-6, 8-9, 11-13** are amended. **Claims 1, 3-6, 8-13** remain pending.

0.2 The objections and rejections of record are withdrawn in response to Applicants' Amendment.

Response to Arguments

0.3 Applicants' arguments of 26 January 2004 have been fully considered: they are found persuasive only to the extent that reliability information as an additional level in ARQ protocol is not specifically described by the prior art of record as claimed. Khan uses such hybrid ARQ means in Fig. 4: block 450.

Claim Objections

1. It is not clear, in Claim 1 line 5, what is meant by "it." Appropriate correction is required.

Claim Rejections - 35 USC ' 103

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2.1 Claims 1, 3-5, 9, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kato** (US Patent No. 5,844,918) in view of Tanaka et al. (PCT Pub. No. W098/58468 from 12/23/98) in further view of **Khan et al.** (WO 00/21236; 13 April 2000).

Referring to claims 1, 9, 12-13, Kato teaches that "...control information such as ACK/NACK ... is transmitted over a channel ..." (column 14, lines 34-36) considering that "ARQ (Automatic Repeat Request) have been known as error control techniques in the field of digital communications" (column 1, lines 12-14 and, e.g. column 14, lines 13, 14). Kato does not explicitly point out to obtain and report reliability, but Tanaka et al. teaches to obtaining and "...amending the received encoded signal ... then conducting most likelihood decoding on a resultant signal, outputting a decoded signal together with information representing reliability of the decoded signal, and using the reliability information ..", and "... on the basis of a decoded signal having higher reliability out of the two decoded signals thus obtained, the transmitted encoded signal is reproduced. As a result, highly reliable signal reproduction can be conducted". Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kato with the teaching of Tanaka by providing obtaining reliability of the received packet and reporting the reliability of the received packet, because one of ordinary skill in the art would simply use the well known technique of the transmitting/receiving information/data reliability evaluation, as Tanaka teaches, in order to provide authenticity of the transmitted/received information/data for communication systems using automatic repeat request.

While **Kato & Tanaka et al.** substantially disclose the procedure for the claimed method or apparatus, they **fail to specifically mention** that the packet combination protocol is based on said reliability determination.

However Khan uses such hybrid ARQ means in Fig. 4: block 450.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure of **Kato & Tanaka** by including therein packet combination protocol based on said reliability determination methods as taught by **Khan** because such modification would provide the procedure disclosed in **Kato & Tanaka** with a technique whereby it is possible to design a data communication system wherein transfer decisions may be made based on estimated channel criteria in real time." {See **Khan**, Id., Fig. 4: block 450 and abstract.}

Claim 3 is rejected as depended from respective claim 1, hence inherits the deficiency in claim 1. Kato teaches that "the data memory 122 stores the transmission data packet ..." (column 9, line 31). Kato does not explicitly point out to reliability of the received packet, but Tanaka et al. teaches to amend the received encoded signal ... then conducting most likelihood decoding on a resultant signal, outputting a decoded signal together with information representing reliability of the decoded signal, and using the reliability information ..", and " ... on the basis of a decoded signal having higher reliability out of the two decoded signals thus obtained, the transmitted encoded signal is reproduced. As a result, highly reliable signal reproduction can be conducted". Also, according claim 3, Kato teaches that "... control information such as ACK/NACK ... is transmitted over a channel ..." (column 14, lines 34-36).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine whether or not the received packet is to be stored on the base of the reliability of the received packet, and to perform a control of a transmission parameter, because one of ordinary skill in the art would use the well known technique of the transmitting/receiving information/data on the base of ACK/NACK, as Kato teaches, in order to

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provide authenticity of the transmitted/received information/data for communication systems using automatic repeat request.

Referring to claim 4, Kato teaches to transmit an ACK signals (see "... ACK/NACK ... is transmitted..." /column 14, line 35/), and to perform a control at the transmission end by "control information such as ACK/NACK" (column 14, lines 34, 35).

Claim 5 is rejected as depended from respective claim 4, hence inherit the deficiency in claim 4, and also as being disclosed by Kato. Kato teaches that "...error correcting operation ... with respect to the overall basic data that includes the basic data portion of a retransmitted packet, with use of the error correcting code including the basic data and the parity code., when the packet for which the retransmission request was made is retransmitted from the sending side." (column 5, lines 7-12).

As per claims 12, 13, claiming "a part transferring" and "a part receiving", Tanaka et al. (PCT Pub. No. W098/58468 from 12/23/98) teaches to have the transmitting and receiving parts, e.g. as shown on Figs. 1A, 1 B.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the transferring and receiving parts, because one of ordinary skill in the art would use the teaching of Tanaka disclosed the transferring and receiving parts in the Information data multiplex transmission and error correcting system, considering the well known apparatus architecture for the transmitting/receiving information/data on the base of ACK/NACK in order to provide authenticity of the transmitted/received information/data for communication systems using automatic repeat request including a mobile station.

2.2 Claims 6, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,844,918 to Kato in view of Tanaka et al. (US 5,781,542) in further view of **Whinnett** (GB 2313237; 19 Nov. 1997).

Referring to claims 6, 8-11, Kato teaches to provide "... communication from a base station to a terminal, [and] communication from the terminal to the base station. The terminal establishes bidirectional communication ..." (column 14, lines 22-24), "... generating a transmission data packet by the packet assembly circuit 12" (column 9, lines 31,32), "... ARQ communications system is provided with a data transmitter ... and a data receiver ..." (column 1, lines 45-47). Also Kato uses "control information such as ACKINACK ..." (column 14, lines 34, 35). Kato does not explicitly point out to a plurality of station, thereby inherently does not limit the number of the station, but Tanaka et al. teaches to use a plurality of stations, e.g. as shown on Fig. 1.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide transmitting an ACK signal and simultaneous receiving by a plurality of base stations a signal transmitted from a mobile station, generating the ACKINACK signals at the plurality of base stations, and transmitting them to the mobile station, because one of ordinary skill in the art would modify Kato with the teaching of Tanaka by providing transmitting an ACK signal and simultaneous receiving by a plurality of base stations a signal transmitted from a mobile station, generating the ACK/NACK signals at the plurality of base stations, and transmitting them to the mobile station, considering the well known technique of the transmitting/receiving information/data on the base of ACK/NACK in order to provide authenticity of the transmitted/received information/data for communication systems using automatic repeat request.

While Kato & Tanaka et al. substantially disclose the procedure for the claimed method or apparatus, they **fail to specifically describe in detail transfer diversity means.**

However Whinnett uses such **transfer diversity means** in Fig. 1:block 113.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure of **Kato & Tanaka** by including therein **transfer diversity means** as taught by **Whinnett** because such modification would provide the procedure disclosed in **Kato & Tanaka** with a technique whereby it is possible to design a data communication system wherein transfer paths may be varied for gain enhancement and distortion reduction in real time." {See **Whinnett**, Id., abstract.}

Claim 8 as depended from respective claim 6, hence inherits the deficiency in claim 6. Also, referring to claim 8. Kato teaches to generate "the ACK/NACK signals ..." (column 14, lines 34, 35), and does not explicitly point out to obvious operation of determination the proper reception, when the mobile station receives the ACK/NACK signals, but Tanaka et al. teaches that "... communication mode determining means for adaptively determining a combination between a type of multi-level modulation scheme and the number of spread codes assigned to communication between the first and second information communication apparatuses, the combination being determined based on a traffic amount of the information communication system such that the combination enables an optimal transmission efficiency ..." (see e.g. column 11, lines 27-35).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide generating the ACK/NACK signals and determining the proper reception, when the mobile station receives the ACK/NACK signals, because one of ordinary skill in the art would modify Kato with the teaching of Tanaka by providing generating the ACK/NACK signals and determining the proper reception, when the mobile station receives the ACK/NACK signals in order to provide authenticity of the transmitted/received information/data and recognition of the mobile station in communication systems using ARQ.

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The Examiner interprets claims 9 and 10 as being similar to claim 6, therefore claims 9 and 10 are rejected based on the same rationale thereof.

Referring to claim 11, Kato teaches to generate "the ACK/NACK signals ..." (column 14, lines 34, 35), and does not explicitly point out to a plurality of station, thereby inherently does not limit the number of the station, but Tanaka et al. teaches to use a plurality of stations for receiving the signals from the host station, e.g. as shown on Fig.1.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use part generating the ACK/NACK signals and a plurality of base stations, because one of ordinary skill in the art would modify Kato with the teaching of Tanaka by using part generating the ACK/NACK signals and a plurality of base stations receiving the transmitted signals, considering the well known technique of the transmitting/receiving information/data on the base of ACK/NACK in order to provide authenticity of the transmitted/received information/data for communication systems using automatic repeat request including a mobile station.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

3.1 Any response to this action should be mailed to:

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or faxed to: (703) 872-9306 for all formal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (Receptionist).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (703) 305-0755. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady, can be reached on (703) 305-9595.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Guy J. Lamarre, P.E
Primary Examiner
4/19/04
